CLAIMS

We claim:

1. A method of determining whether a canine is susceptible to canine malignant hyperthermia, comprising the step of obtaining a nucleic acid sample from a canine and examining the sample for the presence or absence of a T1640C mutation, wherein the presence of the mutation indicates that the canine is susceptible to canine malignant hyperthermia.

2. The method of claim 1 wherein the nucleic acid sample is a genomic DNA sample.

3. The method of claim 2 wherein the DNA is obtained from cheek cells.

4. The method of claim 2 wherein the DNA is obtained from muscle cells.

5. The method of claim 2 wherein the DNA is obtained from blood cells.

6. The method of claim 1 wherein the step of examining the sample for the presence or absence of a T1640C mutation comprises

amplifying a portion of the canine RYR1 gene, wherein the portion comprises nucleotide 1640, and examining the amplified product for the presence of the T1640C mutation.

7. The method of claim 6 wherein the portion comprises the sequence between Exon 14 and Exon 16 of the RYRI gene.

8. The method of claim 6 further comprising the step of digesting the amplification product with a restriction endonuclease.

9. The method of claim 7 further comprising the step of digesting the amplified product with a restriction endonuclease.

10. The method of claim 8 wherein the restriction endonuclease is *MscI*.

11. The method of claim 9 wherein the restriction endonuclease is *MscI*.

12. A kit for determining whether a canine is susceptible to canine malignant hyperthermia comprising:

(a) a set of primers useful for amplifying at least a portion of the RYRI gene, wherein the amplified portion comprises nucleotide 1640; and

(b) a restriction endonuclease capable of differential cleavage in the presence or absence of a T1640C mutation.

13. The kit of claim 12 wherein the restriction endonuclease is *MscI*.

14. The kit of claim 12 wherein the primers comprise SEQ ID NOs:19 and 20.